Massachusetts Urban & Community Forestry Program

The Citizen Forester

MAY 2015

The Best Management Practices: Construction & Tree Protection

By Rick W. Harper,

Recalling once again that the Best Management Practice (BMP) companion publications are developed by the International Society of Arboriculture (ISA) for application by arborists and urban forestry practitioners to aid in the "interpretation of the professional standards and to guide work practices based on current science and technology," we now examine *Managing Trees During Construction* by Kelby Fite, Ph.D., and E. Thomas Smiley, Ph.D (2008). ISA developed this guide as a complement to the ANSI A300 (Part 5) Tree, Shrub, and other Woody Plant Maintenance – Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development and Construction), by the Tree Care Industry Association (TCIA).

This guide commences by defining "conservation" as "the process of selecting trees, forest stands, shrubs and understory growth for protection during development;" it then continues to define tree "preservation" as "the process of protecting trees from damage related to the construction process" and how conservation and preservation co-mingle to "protect selected trees throughout the (construction) process so that they will continue to provide benefits for decades to come." The guide continues by defining the economic, aesthetic, and ecosystem services derived from trees as clear justification for retaining trees, as well as for fulfilling regulatory requirements in some situations.

The most common types of injury associated with trees and construction activities outlined include: root cutting/damage, soil compaction, mechanical injury to the tree itself, and excess fill placed over the root collar.

Each of the "five phases" associated with construction projects detailed include:

The Planning Phase, which is when the key parties involved consider the needs of the site pertinent to buildings, structures, land, and trees: building designers, architects, developers, and, ideally, arborists. It is at this stage that the arborist has the opportunity to advocate for steps to be taken in relation to the conservation and protection of the tree resources. This is best achieved by inventorying the trees on site and determining which ones should remain and which ones should be removed. This may include a cost-benefit analysis, a species-specific evaluation regarding desirability and tolerance to construction activities, an evaluation of both biological and structural perspectives related to plant health, and an assessment related to soil conditions and hydrology. The "General Conservation Suitability Worksheet" is outlined as being a key resource to help guide the arborist through this process.

Tree Protection Zone, Toronto.

The Design Phase is where the actual recommendations are advanced by the consulting arborist, typically via a formal written management report. This includes which trees should be retained or removed. The management report should include a detailed tree inventory with extensive assessment information about the site including recommendations for parking, construction/heavy-equipment operations, tree protection fencing, etc. The arborist should work directly with contractors, developers, planners, andarchitects to ensure that structures – and infrastructure – are sited with consideration for trees. The guide wraps up this section by discussing the

(Continued on page 2)

Construction & Tree Protection

(Continued from page 1)

benefits associated with protecting groups of trees and a strategy of leaving less desirable trees as an edge or buffer designed to protect other more desirable trees from injury related to construction activities.

The Pre-Construction Phase follows the planning stage and it is here that the tree protective strategies are carried out (e.g., removals occur and protective zones are established) and construction layout takes place. A "Tree Protection Zone (TPZ)" is defined as "an arborist-defined area surrounding the trunk intended to protect roots and soil within the critical root zone and beyond… (p.11)". The Critical Root Zone (CRZ) is "the area around the trunk where roots essential for tree health and stability are located" (p.11). The method for identifying the TPZ can vary and includes the "dripline method" and the "trunk diameter method."

The dripline method simply involves using the tree canopy dripline to define the TPZ boundary, where the area within the dripline is essentially the TPZ in its entirety. The trunk diameter method calculates the TPZ by by multiplying the DBH (diameter at breast height, measured 4.5 feet from the ground) by a factor (i.e. the "multiplier" or "m") of 6-18 based on the species tolerance and age (p.31-33 features a listing of tree species tolerance to construction).

Of real-world benefit in this guide is not only the acknowledgement that construction activities may need to take place within the TPZ, but that steps may be appropriately taken to limit this damage:

1. Apply 6-12" (15cm – 30cm) of wood chip mulch;
2. Lay plywood [0.75" (2cm) thick] or woodbeams [4' x 4' (10x10cm)] over a ≥ 4" (≥ 10 cm) thick layer of wood chip mulch;
3. Apply 4-6" (10-15cm) of gravel over taught, staked geotextile fabric;
4. Placing commercial logging or road mats on top of a mulch layer (which should be temporary if it is 4" or larger).

Specifications regarding fencing materials, trunk protection, and signage are outlined with preference given to a well-anchored "chain-link, wire-mesh or wood (p.15)" fence placed at a height of "4-6 feet (1.2 – 2.8m)".

The practice of root pruning is well detailed when roots one-inch diameter or larger are encountered; ideally soil is first removed, however cutting through the soil and even root pruning after being severed mechanically (i.e. by a backhoe) are explored as possible root pruning methodologies. Appropriate tools and root treatment options are discussed.

Tree Protection Zone at a college campus.

Boring under root systems of trees is explored when roots one-inch (2.5 cm) in diameter are encountered, as a key alternative to trenching around root systems. Cutting of roots within 5-6 times the radius of the trunk diameter often occurs during transplant and rarely results in plant death if proper measures are taken. When boring, the bore hole itself should occur below the 2-3' (0.6-1.0m) depth and offset by a distance based on the DBH of the tree in question.

Grade changes are outlined as being potentially devastating to trees and are strongly discouraged. Careful installation of tree wells and tree islands are discussed as being helpful in situations where it is necessary to change grade outside of the CRZ. Irrigation is discussed as being an important tool to help manage plant health in a time of construction activity. Irrigation water should penetrate 6-18" (15-45cm) and be administered at a rate of one inch of irrigation weekly in temperate areas in the absence of rainfall. Additionally, the application of 2-4" (5-10cm) of organic mulch (i.e. wood chips) is discussed as being beneficial within the TPZ as well as select pruning and fertilization strategies as need is demonstrated, aimed at maximizing plant health.

The Construction Phase is the next stage that includes the formal building activities. The arborist should remain in contact with both the key decision makers (i.e. developer, regulatory enforcers) and construction teams with the primary task of monitoring and ensuring that on-site activities do not unnecessarily impact the health of trees, the landscape and on-site vegetation. The guide identifies that the integrity of the TPZ areas may need to be inspected and changes to the construction plan should be monitored – especially when tree conservation may be impacted. The final stages of construction that often include landscape installation should also be monitored

Construction & Tree Protection

(Continued from page 2)

to ensure that protected trees are not being impacted. The construction phase may also include remedial activities like pruning broken branches and addressing bark wounds.

The Post-Construction Phase is identified as being the most common phase when arborists are actually contacted and "called-in" to a site where tree health may be in question. The guide properly identifies that in times like these, options for tree preservation are "dramatically" (p.26) limited. Ideally, however, it is in this phase that TPZ fencing is removed, and immediate – as well as long-term – plant health monitoring takes place.

The *Managing Trees During Construction* BMP closes with a summary of activities that arborists should perform (p.27):

1. *Identify tree resources and make recommendations for removal or protection.*
2. *Determine the appropriate size for tree protection zones.*
3. *Establish tree protection zones with appropriate materials.*
4. *Monitor tree health and site conditions during and after construction.*
5. *Be prepared to take the actions needed to protect and preserve retained trees.*

The overall theme of this guide can be properly summed up in the introductory paragraphs (p.2): That we are not typically aiming for *"the preservation of all trees on the site"* but to carry out the *"thoughtful process of selecting certain trees for protection and removing trees that cannot, or should not, be preserved."*

For more information more about the BMP companion guides, visit: www.isa-arbor.com

Rick W. Harper is an Extension Assistant Professor in the Department of Environmental Conservation at UMass-Amherst.

From UMass Extension

UMass Extension is hosting numerous courses and workshops this spring. Look for programs on invasive species, pollinators, backyard orchards, pests and weeds, and more. Go to www.umassgreeninfo.org for more information. To sign up for the Landscape Message, go to: http://extension.umass.edu/landscape/.

Chokeberries—Addition from April

We erroneously left out some edibility information from Russ Cohen on *Aronia arbutifolia* last month. We reached out to Russ for his expertise with wild edibles. He has nibbled on some tasty black chokeberries (*A. melanocarpa*) on Mount Wachusett and also purple chokeberries in Newton, along the Charles River Bikeway. Other chokeberries he has sampled raw have not been so tasty. Chokeberries can benefit greatly from sugar and cooking. For additional information on eating chokeberries, check out these resources:

www.tcpermaculture.blogspot.com

Aronia: Native Shrubs with Untapped Potential

Eattheweeds.com

www.pressherald.com

Russ Cohen serves as Rivers Advocate for the MA Dept. of Fish and Game's Division of Ecological Restoration, and, in his spare time, he teaches people how to connect to the landscape via their taste buds, as well as forages himself.

Attention Tree Wardens of Western Mass. and Western Mass. Tree Companies

Inaugural Dinner Meeting

Thursday, June 4, 2015, 5:30 - 7:30 p.m.
Speaker: Ken Gooch, DCR Director of Forest Health
Northampton, MA

Come to the inaugural meeting of the Western Mass Tree Wardens, a sub-group of the Massachusetts Tree Wardens' and Foresters' Association.

- Meet and network with other tree wardens and tree companies from Western Mass.
- Hear Ken Gooch discuss Emerald Ash Borer (EAB) and what you can do to minimize the impact.
- Earn CEUS.

If your select board asks what your community is doing about EAB, do you have an answer?

More information coming soon!

In partnership with the Mass. Tree Wardens' and Foresters' Association, Mass. Dept. of Conservation and Recreation, UMass Department of Environmental Conservation, Center for Agriculture, Food & the Environment, and Eversource Energy.

Species Spotlight—Cockspur hawthorn, *Crataegus crus-galli*

By Mollie Freilicher
MA-DCR
Community Action Forester

Cockspur hawthorn is one of many hawthorns native to North America. The genus *Crataegus*, in the rose family, contains species that occur throughout the northern hemisphere. There are native species of hawthorns in temperate regions across North America, Europe, and Asia, and the species regularly hybridize, often making determinations in the wild difficult. Hawthorns are known for their small stature, flowers, and fruit, and, of course, their thorns. Cockspur hawthorn is one species, though, that has a thornless variety (*Crataegus crus-galli var. inermis*), making it more suitable for urban landscapes. The cockspur hawthorn is native from southern Ontario and Quebec, south to Florida, and west to Kansas. It is hardy in USDA Hardiness zones four to seven. It has been planted as an ornamental for hundreds of years—colonists planted cockspur hawthorn in their yards.

Cockspur hawthorn is a small tree, growing to 20-30 feet tall, with a comparable spread. Its form is broad, rounded, and dense, with spreading, horizontal branches. The leaves of cockspur hawthorn are alternate, simple, obovate, with a rounded apex and serrate margins. They are one to four inches long and one-third to one-half inches wide. They are a shiny dark green color in the summer and turn scarlet red in the fall. Twigs are typically slender and round, and with 1.5 to 3-inch long thorns. Bark is gray and platy. Generally for hawthorns, buds are sessile and round, with six brownish visible scales.

Cockspur hawthorn blooms in May for about a week. The flowers are perfect, one-half to two-thirds inch in diameter, with five white petals and 10 (or up to 20) pink or pale yellow stamens. The flowers, appear in corymbs, two to three inches wide, and do not have a pleasant odor.

The fruit, a round, dark-red drupe, 3/8 to ½ inch in diameter, ripens in early fall and persists for a few months.

As a member of the rose family, cockspur hawthorn is susceptible to fire blight and is also susceptible to rusts, powdery mildew, aphids, and many other insects. Doug Tallamy, in *Bringing Nature Home*, highlights hawthorns as supporting 159 species of caterpillars native to the eastern United States. This includes supporting various sphinx moths, dagger moths, and butterflies. Fruit provides food for songbirds, including black-capped chickadees and cedar waxwings. Thorny varieties also provide protection for nesting birds.

Cockspur hawthorn does best when planted as a small tree in the spring and while it can survive under a variety of soil conditions, it does best in well-drained soils in full-sun conditions. Plant the thornless variety in areas where children play or may come in contact with the tree. Cockspur hawthorn is a great addition to the landscape, especially where space may be limited or overhead wires may be nearby. It is tolerant of urban conditions, including winter salt, and can provide year-round interest.

Photos: Form, Fall color: UConn; Fruit, thorn: Wikimedia; Bark: John M Hagstrom gobotany.org; Flower: RW Smith wildflower.org.

Growing on Trees—Grants

DCR Urban and Community Forestry Challenge Grants

Deadline May 1, October 1 (Intent to Apply)

Challenge grants are 50-50 matching grants (75-25 for environmental justice projects) to municipalities and nonprofit groups in Massachusetts communities of all sizes for the purpose of building local capacity for excellent urban and community forestry at the local and regional level.

The USDA Forest Service provides funding for the grant program, and DCR administers the grants with guidance from the Massachusetts Tree Wardens' and Foresters' Association. The DCR Urban and Community Forestry Program assists communities and nonprofit groups in their efforts to protect and manage community trees and forest ecosystems, with the ultimate aim of improving the environment and enhancing the livability of all of Massachusetts's communities.

For more information on the Challenge Grants (including our Eversource Go Green grants and National Grid Partnership Grants, contact Julie Coop at 617-626-1468 or julie.coop@state.ma.us or Mollie Freilicher at 413-577-2966 or mollie.freilicher@state.ma.us.

TD Bank Charitable Foundation

Through the TD Charitable Foundation, we focus our grant-making to help sustain the well-being of the communities we serve. Grants are made only to qualified, federal tax-exempt 501(c)(3) organizations as defined by the Internal Revenue Service, and should support specific program initiatives that must be detailed in the grant application. The TD Charitable Foundation limits grants to community-based organizations that serve communities in which TD Bank does business. For more information, go to: http://www.tdbank.com/community/grants.html

Keen

At KEEN, we're committed to inspiring responsible outdoor participation to help preserve the places we all play. The KEEN Effect is a way for us to support organizations who are dedicated to just that! Through the KEEN Effect, we grant $10,000 grants to nonprofit organizations around the world who are dedicated to responsible outdoor participation. Help us find those groups! Next deadline: August 1. For more information, go to: http://www.keenfootwear.com/keen-effect.aspx.

Beveridge Family Foundation

The mission of the Beveridge Family Foundation, Inc. is to preserve and enhance the quality of life by embracing and perpetuating Frank Stanley Beveridge's philanthropic vision, through grant-making incentives in support of programs in youth development, health, education, religion, art, and environment, primarily in Hampden and Hampshire counties, Massachusetts.

Next grant deadline: August 1, 2015. Learn more at http://www.beveridge.org/

New England Grassroots Environmental Fund

NEGEF grants are designed for groups that:

- are doing community-based environmental work in CT, ME, MA, NH, RI or VT;
- are volunteer-driven or have up to 2 full-time paid staff (or equivalents);
- have an annual operating budget up to $100,000.

Please note that NEGEF does not fund statewide, regional, national, or international work. Our focus is on community-based, local initiatives. NEGEF funds can not be used for retroactive expenses, lobbying purposes, micro-grant programs, or large capital acquisitions.

Seed Grants

Quick project-focused grants dedicated to helping volunteer groups launch and build their *newly-evolving project(s)*.

Deadline: Apply anytime
(expect a decision in 4 weeks)
Grant range: $250 – $1,000

Grow Grants

Competitive group development grants dedicated to helping *established groups* increase capacity, collaborate, and leverage impact.

Deadlines: March 15 & September 15
(expect decisions early June & December)
Grant range: $1,000 – $3,500

For more information, go to: http://grassrootsfund.org/dollars

Growing on Trees

Webcasts and Seminars

Urban Forestry Today Noonhour Webcast Spring Series

'Pests in our Midst'

Lecture II:
Technology, Pests and Urban Trees

Description:
The pest-detection module in i-Tree Streets and Eco provides a portable, accessible and standardized method of observing a tree for possible insect or disease problems. Join Dr. Dave Bloniarz, US Forest Service as he outlines this important resource designed to aid urban foresters, commercial arborists/consultants and interested volunteers in their day-to-day urban forestry-related activities.

To attend and obtain free ISA/MCA CEU's simply visit www.joinwebinar.com
(code# 121-999-467) at noon on Thursday May 21.

For more information, contact:
Rick Harper, Department of Environmental Conservation
University of Massachusetts, Amherst
rharper@eco.umass.edu

Sponsored by the University of Massachusetts Department of Environmental Conservation, in cooperation with the Massachusetts Tree Wardens' & Foresters' Association, University of Massachusetts Extension, and the Massachusetts Department of Conservation and Recreation.

Harvard Forest Seminar Series

Attend in person or via the web. Seminars are Fridays at 11:00 a.m. Eastern Time, unless otherwise noted. They are held in the Harvard Forest Seminar Room and also can be joined online via webstreaming. Seminars are free and open to the public; no pre-registration is required. For additional information, contact Audrey Barker Plotkin (aabarker@fas.harvard.edu). More information.

Friday, May 1
Wyatt Oswald, Harvard Bullard Fellow and Emerson College
Post-glacial climate, vegetation, and fire across southern New England

Friday, May 8
Chris Reed –Stoss Landscape Urbanism & Graduate School of Design
Title TBA

Urban Forest Connections

Second Wednesdays | 1:00 – 2:00 pm ET
The Forest Service's Urban Forest Connections webinar series brings experts together to discuss the latest science, practice, and policy on urban forestry and the environment. These webinars are open to all. Past webinar presentations and recordings are available online: http://www.fs.fed.us/research/urban-webinars/.

The Science Behind i-Tree
May 13, 2015 | 1:00-2:00pm EDT
David Nowak, USDA Forest Service

Upcoming Sessions:
June 10, 2015 | 1:00-2:00pm EDT
July 8, 2015 | 1:00-2:00pm ET

USDA Social Vulnerability Webinar Series

The Rocky Mountain Research Station and the University of Montana invite you to join us for the Social Vulnerability Webinar Series: Communities, Climate Change, and National Forests. The series explores community vulnerability to climate change and how natural resource managers can integrate social vulnerability assessment into planning and decision-making.

Next webcast:
May 6, 2015
Integrating Social Vulnerability into Planning and Decision-Making
Laurie Yung, Dan Williams, Carina Wyborn, and Daniel Murphy

Participation is limited to the first 100 attendees.

For more information, go to: http://www.fs.fed.us/rmrs/webinar-series/social-vulnerability/

New England Botanical Club May Meeting

May 1, 2015, 6:45 p.m.
Dr. David Hibbett, Professor of Biology,
Clark University, Worcester, MA
"Getting to the Roots of Rot: Phylogenomics of Wood-Decaying Mushrooms"
At Garden in the Woods, Framingham, MA
More information at www.rhodora.org

Growing on Trees

Courses from the New England Wildflower Society

Gardening for Pollinators

Pollinators are all the buzz these days, but what are they and why are they so important? In this class, you will learn how essential pollinators are to the reproductive success of the world's flowering plants, and take away easy tips for attracting and supporting pollinators to your own garden and yard.

We also offer another Gardening for Pollinators program at Nasami Farm, Whately on May 6.
Tuesday, June 9, 10 a.m.-12:30 p.m.
Location: Garden in the Woods, Framingham, MA
Program Code: HOR4258
Instructor: Ellen Sousa
Fee: $33 (Member) / $40 (Nonmember)
Limit: 13 Certificate: Elective: HD/Adv.HD CEU: 2 AOLCP; 1 MCLP
Cosponsor: Mass Audubon

Wild Coastal Edibles

Discover dozens of nutritious wild coastal edible plants! Join Russ Cohen, foraging expert and author of *Wild Plants I Have Known...and Eaten,* for a walk at Dolliber's Cove and Crowninshield Island in Marblehead, MA. You'll learn how to identify, find, and prepare edible coastal plants safely and responsibly.
Sunday, June 14, 1:30-4:30 p.m.
Location: Marblehead, MA
Program Code: FDT1038
Instructor: Russ Cohen
Fee: $25 (Member) / $35 (Nonmember)
Limit: 20 Certificate: Field: FB/Adv.FB CEU: 3 AOLCP. Cosponsor: The Trustees of Reservations

Rhododendrons and Their Relatives

This summer, visit the Garden's rhododendrons in peak bloom. A member of the Ericaceae, or heath, family, rhododendrons thrive in New England's acidic soils. We'll begin by looking at plant attributes and discussing how the many members of this diverse genus were named and classified, and then move outside to learn tips for identifying the rhododendrons you may find in your own woods.
Wednesday, June 24, 9:30 a.m.-12:30 p.m.
Location: Garden in the Woods, Framingham, MA
Program Code: BOT2313
Instructor: Carol Govan
Fee: $44 (Member) / $54 (Nonmember)
Limit: 16 Certificate: Core: Adv.FB, Elective: all certificates CEU: 1 MCLP

New England Plant Communities

For a relatively small region, New England boasts an astonishing variety of plant communities, ranging from freshwater and tidal wetlands, to coastal dunes, grasslands, forests, and montane. Learn how soil, topography, moisture, geological conditions, glaciation, and historical use affect the vegetation of each community. We will study each community's dominant canopy, structure, range, and characteristic species, then apply this knowledge in the field.
Wednesdays, July 1, 8, 15, 6-8:30 p.m.; Sundays, July 12, 19, 10 a.m.-2 p.m.
Location: Garden in the Woods, Framingham, MA Field Trips: Susan B. Minns Wildlife Sanctuary, Princeton, MA; Sly Ponds, Plymouth, MA
Program Code: BOT4000
Instructor: Dr. Patricia Swain
Fee: $224 (Member) / $280 (Nonmember)
Limit: 16 Certificate: Core: FB, Elective: all certificates CEU: 4 AOLCP; 2 MCLP; 1 MCH

Native Woody Plant Materials

Come explore the huge variety of native trees, shrubs, and woody vines. Learn which species grow well in shade, which support local wildlife, and how you should stagger your plantings for continuous bloom, fruit production, and fall color. We'll discuss growth characteristics, cultural requirements, and best horticultural uses. The course will include lectures and walks in the Garden as well as a field trip to The Arnold Arboretum. Bring a bag lunch each day.

Monday, September 21, 10 a.m.-2:30 p.m.; Wednesday, September 23, 11 a.m.-1 p.m.; Saturday, September 26, 10 a.m.-2:30 p.m.
Location: Garden in the Woods, Framingham, MA, and The Arnold Arboretum, Jamaica Plain, MA
Program Code: HOR1100
Instructor: Dan Jaffe
Fee: $170 (Member) / $200 (Nonmember)
Limit: 16 Certificate: Core: HD; Elective: Adv. HD CEU: 4 AOLCP; 2 MCLP; .5 MCH

Gleanings

Emerald Ash Borer Economics, Management Approaches, and Decision Making

By Richard J. Hauer

The discovery of Emerald ash borer (*Agrilus planipennis*) in North America seems just like yesterday, even though the ten year anniversary just occurred this July. Much has been learned about Emerald ash borer (EAB) during that decade. As a recap, North American ash tree species are still susceptible to EAB and tens of billions of dollars of economic impact are at stake. Tens of millions of ash trees have died and tens of millions more are facing the beetle's invasion. Resistant ash trees are being looked at within breeding programs and the evaluation has started of the few ash survivors after EAB has killed the rest in an area. Progressive research with the biocontrol of EAB continues to move forward with the hope that natural predators will decrease the future impact of EAB. Municipal EAB management plans that are developed to address the pest will help to make an orderly transformation beyond ash. Scientific advancements into tree treatments are offering exciting ways to prevent EAB from killing ash trees. The effectiveness of these chemical treatments provides an excellent way to slow the loss of ash and to conserve the ash canopy. Finally, developed economic models provide a means to address the financial impacts of EAB management approaches.

Just what should ash tree owners do is an important question? Ultimately this is a question based on the desires of ash tree owners. People make rational and irrational decisions and sometimes decide to go with a desire not so much based on economic worth as much as I desire that option. Just look at cars. A very fast and cool looking sports car will get you from A to B in the same time as a plain economy car, assuming all traffic laws are followed. Tree care is sometimes like that with clients, they desire to retain a tree longer, but the cost of the treatment might be greater than what the future tree value can justify. There is nothing wrong with that scenario if it is the desired decision. Typically however the investment in landscape plants is a growing property asset.

Determining the benefits and costs of EAB management approaches is important to rational decision making. If ash trees have no value, the decision could be as simple as doing nothing except removing those trees in harms ways. Homeowners, residents of a community, arborists, and other decision makers, can debate the value of ash trees and if a do nothing approach is truly best. Others may place their efforts with removing ash trees before EAB arrives. Trees will cost money to remove anyways so why not just preemptively remove them and be done with the problem goes the logic. A third approach is retention of ash trees through treatments currently chemically based. In all cases some economic consideration is a vital basis as to which management approach is used.

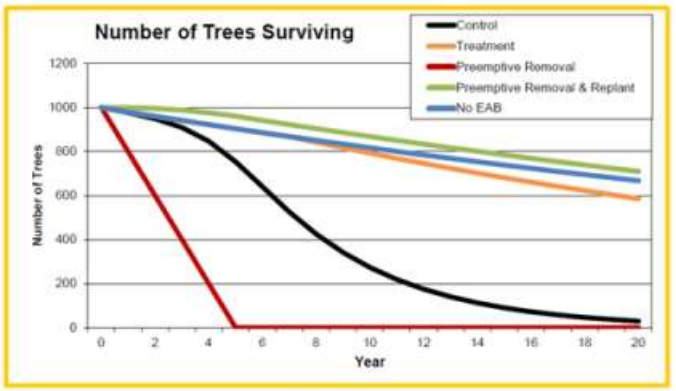


Figure 3. After 20 years few ash trees are left with the do nothing (control) approach compared to treatment, no EAB, and preemptive removal followed by tree replacement.

Read Hauer's full piece at:
http://dnr.wi.gov/topic/UrbanForests/documents/EABToolBox/EABCostsBenefits.pdf

Changing Landscapes Factsheets

The Changing Landscapes series of 21 factsheets is intended to help urban foresters, service foresters, fire specialists, and other natural resource professionals become more familiar with land use planning—what it is, the policies that direct it, and the tools used to carry it out. The hope is that a better understanding of land use planning will help natural resource professionals be more confident and informed to ensure that natural resources are considered, protected, and sustainably managed to the greatest extent possible when planning decisions are made that affect land use across the rural-to-urban continuum. Learn more at: http://www.landscapestewardship.org/changing-landscapes-factsheets-page.

Gleanings

Southern Pine Beetle

Southern pine beetle, or SPB, is a bark beetle that infests pine trees. In southern states, loblolly, shortleaf, and Virginia pines are attacked, but all pines are potential hosts, including pitch pine, found in several areas in New York State [and Connecticut]. The beetle is small, only 2-4 mm in length, about the size of a grain of rice, and is red-brown to black in color.

Where does it come from?

SPB is native to the southeastern United States, but has been expanding up the Eastern Seaboard in recent years. Warming of extreme winter temperatures has most likely contributed to this range expansion.

What trees are affected?

All pine trees are susceptible, but pitch pine is the preferred host in the northeast. In addition to pines, hemlocks and spruce may also be affected in highly infested areas.

What are the signs of an infestation?

- Pitch tubes, or popcorn-shaped clumps of resin on the exterior of the bark
- Shotgun patterned holes on the exterior of the bark
- S-shaped tunnels under the bark
- Pine trees that have recently died, characterized by reddish-brown needles

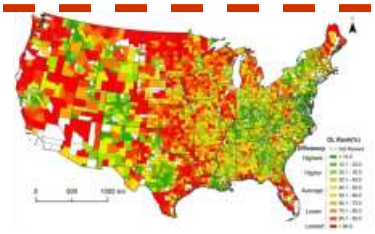
Read the complete factsheet from the New York Department of Environmental Conservation: http://www.dec.ny.gov/animals/99331.html. Read an article from *The New York Times*.

DCR Greening the Gateway Cities planting crews for Chelsea, Fall River, and Holyoke at their orientation training in West Boylston.

Researchers Map Seasonal Greening In US Forests, Fields, and Urban Areas

March 31, 2015—Using the assessment tool ForWarn, US Forest Service researchers can monitor the growth and development of vegetation that signals winter's end and the awakening of a new growing season. Now these researchers have devised a way to more precisely characterize the beginning of seasonal greening, or 'greenup,' and compare its timing with that of the 14 previous years. The maps are available at: www.forwarn.forestthreats.org/highlights.

Study Maps Development One U. S. County at a Time



March 25, 2015—Researchers have developed a county-by-county map of the United States's "lower 48" that tells a story of land cover and development across the nation and could provide a framework for planners and policy makers as they consider future development. Read the full story at ScienceDaily.

A Complex Landscape Has Both Vulnerabilities and Resilience to Climate Change

April 3, 2015—In Central Appalachia, changes in precipitation and temperatures are likely to reduce habitat suitability for some tree species, including iconic species such as American beech, eastern hemlock, eastern white pine, red spruce, and sugar maple. Species with ranges that extend largely to the south -- such as eastern red cedar, post oak, and shortleaf pine - may have increases in suitable habitat and biomass as the region warms. Read the full story in ScienceDaily.

We do our best to ensure that listings are accurate, but please check with program organizers for the most up-to-date information.

Gleanings

Massachusetts Big Tree Registry

The Department of Conservation and Recreation (DCR), with support from the Massachusetts Arborists Association and the Massachusetts Tree Wardens' and Foresters' Association, is introducing the Massachusetts Big Tree Registry, a new clearinghouse for Champion Trees and nominated trees in Massachusetts.

A Champion Tree is the biggest tree of its species in the state that has been nominated and verified by DCR program staff or partners. Champion status is determined by a formula promulgated by American Forests, the arbiter of the National Register of Big Trees. A Champion Tree has the most points according to the formula:

$$Trunk\ Circumference\ (inches) + Tree\ Height\ (feet) + \frac{1}{4} Average\ Crown\ Spread\ (feet) = Total\ Points$$

The history of big tree registries goes back to 1940, when American Forests, then known as the American Forestry Association, called for submissions of the biggest trees among 111 North American species. Today, 870 native, naturalized, and recognized naturally-occurring varieties can be nominated. States maintain registries of trees and submit their Champion Trees to American Forests for consideration for placement on the National Register of Big Trees. Massachusetts has two trees listed on the National Register: a sugar maple tree located in Mohawk Trail State Forest, and a hophornbeam tree located in Suffolk County. Perhaps there is another Champion in your community! Do you know of an exceptionally large tree in your community? Nominate it today!


THE SUNDERLAND BUTTONWOOD

The Massachusetts Big Tree Registry will continue to be managed by the DCR Forest Health Program, with support from the Urban and Community Forestry Program. Go to www.mass.gov/dcr/big-trees to download the nomination form to submit a tree for consideration. Complete the form with information about the tree, including circumference, height, and average crown spread, as well as information about the landowner and the nominator, and send it in. Questions about the program can be directed to: big.trees@state.ma.us.

News

Ecological 'Flash Mobs': It's All About Timing... And Magnets?

April 8, 2015—How does an acorn know to fall when the other acorns do? What triggers insects, or disease, to suddenly break out over large areas? Why do fruit trees have boom and bust years? The question of what generates such synchronous, ecological "flash mobs" over long distances has long perplexed population ecologists. Part of the answer has to do with something seemingly unrelated: what makes a magnet a magnet. A study by scientists at the University of California, Davis, found that the same mathematical model that's been used to study how magnets work - a well-known concept in physics called the Ising model—can be applied to understanding what causes events to occur at the same time over long distances, despite the absence of an external, disruptive force. Read the full story at Phys.org.

30 New Species Discovered In Los Angeles In First-Ever Intensive Urban Biodiversity Survey

March 25, 2015—Thirty new insect species of the fly family Phoridae have been discovered in the LA region of California. Describing 30 species in a single paper is rare, but what's especially striking is that all these come from urban Los Angeles. Read the full story at ScienceDaily.

Common Birds Bring Economic Vitality to Cities, New Study Finds

by Michelle Ma

April 7, 2015— A new study published last month in the journal Urban Ecosystems tries to determine what economic value residents in two comparable cities place on having birds in their backyards and parks. Researchers at the University of Washington and Humboldt State University compared two types of common birds - finches and corvids - in both cities, asking residents how much they would pay to conserve the species and what they spend, if anything, on bird food. Read the full story at Phys.org.

News

Exhibit Highlighting Threatened Trees Comes to Polly Hill

By Katherine Scott

Wednesday, March 18, 2015—Participants at last week's final winter walk at the Polly Hill Arboretum got an unexpected treat: a chance to view the completed installation of a traveling exhibit, Vanishing Acts: Trees Under Threat. Curator Tom Clark took walkers on a tour of the exhibit, which consists of 17 sturdy tree-shaped information panels installed throughout the arboretum grounds, one panel each for 15 threatened trees species and two additional informational panels. The 15 species were chosen to highlight the various sources of threat and the possible consequences of species loss for both humans and the ecosystems that the trees inhabit. Most threats are related, either directly or indirectly, to human activities: deforestation for timber, clearing for agriculture, climate change (affecting vulnerability to pests), invasive plants competing with native species, and exploitation of the tree as a resource. The trees in the exhibit represent six of the seven continents. The exhibit was initiated by the Morton Arboretum, a large arboretum in Lisle, Ill. Read the full story at the Vineyard Gazette.

Being near Greened Vacant Lots Lowers Heart Rates

March 26, 2015—Greening vacant lots may be associated with biologic reductions in stress, according to a new study. Residents who walked near newly greened vacant lots had significantly lower heart rates compared to walking near a blighted, or neglected, vacant lot. Read the full story at ScienceDaily.

Mild Winters Not Fueling All Pine Beetle Outbreaks in Western United States

March 30, 2015—Milder winters have contributed to recent beetle outbreaks in Canada, but this is the first study to evaluate warmer winters as a factor permitting simultaneous outbreaks across the majority of its range in the western United States. In the last 15 years, bark beetles in the western U.S. have killed pine forests over more than 140,000 square miles (about the size of Montana), which exceeds the area killed by forest fires during the same years. Warming winters could be fueling these beetle epidemics, but large-scale tests have been limited and other explanations are possible, such as rising summer temperatures that accelerate beetle development and the legacy of forestry practices. Read the full story at ScienceDaily.

Proposed Law Would Put Onus on Tree Owners

By Ken Dixon

March 24, 2015, Hartford -- Property owners would be liable for the damage caused to their neighbors by downed trees or tree limbs under legislation pending in the Judiciary Committee. But the commissioner of the state Department of Energy and Environmental Protection, the leader of the 500-member Greenwich Tree Conservancy, and the head of a nonprofit forest association said Monday that they have problems with the bill. Currently, tree owners and neighbors pay their own cost of minor damage and cleanup when trees fall without hitting homes. But in the bill aired in a public hearing Monday, neighbors could prepare themselves by having neighboring trees inspected by a licensed arborist and having those owners warned of disease or imminent hazards through certified letters. Read the full story at ctpost.com.

Around the Globe: Hanoi Axes Plan to Fell Trees

March 20, 2015— Vietnam on Friday abandoned plans to strip Hanoi's leafy boulevards of thousands of trees after it triggered an outraged social media campaign and an unusual street protest. Some 6,700 trees were due to be cut down in the capital -- a picturesque city of some six million -- as part of a $3.4 million landscaping project, the state-run Thanh Nien newspaper reported. But after outraged Hanoians took to social media to vent their fury, authorities were forced to backtrack. "The chairman of the Hanoi People's committee asked for the cutting down of trees to be stopped," the state-run VNExpress reported Friday. A new Facebook group to save the trees -- some of which are believed to be more than 100 years old, planted by the city's then colonial ruler, France -- had gathered nearly 40,000 likes Friday. In the morning a small protest of a dozen people marched through the city centre holding signs saying "Save the Trees!" On some Hanoi streets, people pinned notices saying "I am a healthy tree, don't cut me!" onto trees earmarked for the chop. "Only those (unhealthy) trees that cannot be maintained will be replaced," said Nguyen The Thao, chairman of the People's Committee, according to the VNExpress report.

Read the full story at *The Daily Mail*.

On the Horizon

June 3	Tree City/Line/Campus USA Awards Ceremony, Amherst, MA, mollie.freilicher@state.ma.us
June 4	Western Mass Tree Wardens Dinner Meeting, Northampton area, For more information, contact mollie.freilicher@state.ma.us
June 11	Best Management Practices for Minimizing Landscape Pests, UMass Extension, Hadley Farms Meeting House, Hadley, www.umassgreeninfo.org
June 12-13	New England ISA Tree Climbing Competition, Northampton, MA www.newenglandisa.org
July 23	MNLA Annual Summer Conference, Topsfield, MA www.mnla.com
Aug 5	Mass. Certified Horticulturalist (MCH) Exam, Westborough, MA, www.mnla.com
Sept 22	MAA Dinner Meeting, Framingham, www.massarbor.org
Sept 27	Mass. Town Forests Celebration, Wilbraham, MA
Oct 2	MCA Exam, Elm Bank, Wellesley, www.massarbor.org
Oct 2-3	SAVE THE DATE—2015 DCR Tree Steward Training
Oct 9-11	Women's Tree Climbing Workshop, Petersham, MA, www.newenglandisa.org
Oct 20	MAA Safety Saves, Elm Bank, Wellesley, www.massarbor.org
Oct 20	MAA Dinner Meeting, Framingham, www.massarbor.org
Oct 25-27	New England ISA Annual Conference, North Conway, NH, www.newenglandisa.org
Nov 16-17	Partners in Community Forestry Conference, Denver, CO, www.arborday.org
Dec 2-4	New England Grows, Boston, MA, www.newenglandgrows.org
Dec 2-5	American Society of Consulting Arborists Annual Conference, Tuscon, AZ, https://www.asca-consultants.org/

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The Citizen Forester is made possible through a grant from the USDA Forest Service Urban and Community Forestry Program and the Massachusetts Department of Conservation and Recreation, Bureau of Forestry.

If you have a topic you'd like to see covered or want to submit an item to *The Citizen Forester* (article, photo, event listing, etc.), please contact Mollie Freilicher or click here.

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